

**Application No.: 10/032,279****Docket No.: 2328-059****Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-20: (Canceled)

Claim 21 (currently amended) A vacuum plasma chamber for processing a workpiece, the chamber including: a first electrode for electrical coupling with gas in the chamber and for connection to a first relatively high frequency RF source, a second electrode for carrying the workpiece and electrical coupling with gas in the chamber and for connection to a second relatively low frequency RF source, an exterior wall at a reference potential, and a plasma excitation region for confining the plasma, the region being spaced from the exterior wall, wherein

the plasma excitation region including (a) louvers connected spaced from the wall, the plasma excitation region being arranged so that the gas flows into the plasma excitation region through the another electrode and out of the plasma excitation region between the louvers, and (b) first and second surfaces at the reference potential, the first surface being located between the louvers and the electrode for carrying the workpiece, the second surface being located between the louvers and the first electrode..

Claim 22: (canceled)

Application No.: 10/032,279Docket No.: 2328-059

Claim 23: (currently amended) The chamber of claim ~~22~~21 wherein the plasma excitation region is bounded by said electrodes and louvers.

Claim 24: (currently amended) The chamber of claim ~~22~~21 wherein the plasma excitation region is symmetrical with respect to the chamber exterior wall and a center point on the electrode for carrying the workpiece.

Claim 25: (original). The chamber of claim 24 wherein the plasma excitation region is arranged so that the spacing between said electrodes can be changed at will.

Claim 26: (canceled)

Claim 27: (currently amended) The chamber of claim ~~26~~21 wherein the excitation region has a geometry is-such that different sheaths are developed between the plasma in the excitation region and between each of (a) the electrode for carrying the workpiece, (b) the ~~another-first~~ electrode and (c) the first and second surfaces at the reference potential.

Claim 28: (currently amended) The chamber of claim 27 wherein the excitation region geometry is such that current at the low frequency has a tendency to flow to a greater extent between the electrode for carrying the workpiece and the ~~another-first~~ electrode than from the electrode for carrying the workpiece to the surfaces of the excitation region at the reference potential.

Claim 29 (currently amended) The chamber of claim 28 wherein the excitation region geometry is such that current at the high frequency has a tendency to flow to a greater extent

Application No.: 10/032,279Docket No.: 2328-059

between the ~~another-first~~ electrode to the surfaces of the excitation region at the reference potential than from the another electrode to the electrode for carrying the workpiece.

Claim 30: (currently amended) The chamber of claim 27 wherein the excitation region geometry is such that current at the high frequency has a tendency to flow to a greater extent between the another electrode to the surfaces of the excitation region at the reference potential than from the ~~another-first~~ electrode to the electrode for carrying the workpiece.

Claim 31: (original) The chamber of claim 21 in combination with a processor including the first and second RF sources, the first RF source being connected to the first electrode, the second RF source being connected to the second electrode.

Claim 32: (original) The combination of claim 31 further including a filter arrangement connected to the first and second RF sources and the first and second electrodes for: (1) enabling current from the first RF source to flow to the first electrode, (2) preventing the substantial flow of current from the first RF source to the second electrode and the second RF source, (3) enabling current from the second RF source to flow to the first and second electrodes, and (4) preventing the substantial flow of current from the second RF source to the first RF source.

Claim 33: (currently amended) A vacuum plasma chamber for processing a workpiece, the chamber including: a first electrode for electrical coupling with gas in the chamber and for connection to a first relatively high frequency RF source, a second electrode for carrying the

**Application No.: 10/032,279****Docket No.: 2328-059**

workpiece and electrical coupling with gas in the chamber and for connection to a second relatively low frequency RF source, an exterior wall at a reference potential, and a plasma excitation region for confining the plasma, the plasma excitation region including louvers at the reference potential and the first and second electrodes, the louvers being spaced from the exterior wall, the plasma excitation region being arranged for enabling gas to be excited to the plasma to flow into the plasma confinement region and out of the confinement region between the louvers the plasma excitation region including first and second surfaces at the reference potential, the first surface being located between the louvers and the electrode for carrying the workpiece, the second surface being located between the louvers and the another electrode.

Claim 34: (original) The chamber of claim 33 wherein the plasma excitation region is bounded by said electrodes and louvers.

Claim 35: (original) The chamber of claim 33 wherein the plasma excitation region is symmetrical with respect to the chamber exterior wall and a center point on the electrode for carrying the workpiece.

Claim 36: (original) The chamber of claim 35 wherein the plasma excitation region is arranged so that the spacing between said electrodes can be changed at will.

Claim 37: (canceled)

Claim 38: (currently amended) The chamber of claim ~~37~~33 wherein the excitation region has a geometry is-such that different sheaths are developed between the plasma in the excitation

Application No.: 10/032,279Docket No.: 2328-059

region and between each of (a) the electrode for carrying the workpiece, (b) the ~~another-first~~ electrode and (c) the first and second surfaces at the reference potential.

Claim 39: (currently amended) The chamber of claim 38 wherein the excitation region geometry is such that current at the low frequency has a tendency to flow to a greater extent between the electrode for carrying the workpiece and the ~~another-first~~ electrode than from the electrode for carrying the workpiece to the surfaces of the excitation region at the reference potential.

Claim 40: (currently amended) The chamber of claim 39 wherein the excitation region geometry is such that current at the high frequency has a tendency to flow to a greater extent between the ~~another-first~~ electrode to the surfaces of the excitation region at the reference potential than from the another electrode to the electrode for carrying the workpiece.

Claim 41: (currently amended) The chamber of claim 38 wherein the excitation region geometry is such that current at the high frequency has a tendency to flow to a greater extent between the ~~another-first~~ electrode to the surfaces of the excitation region at the reference potential than from the another electrode to the electrode for carrying the workpiece.

Claim 42: (original) The chamber of claim 33 in combination with a processor including the first and second RF sources, the first RF source being connected to the first electrode, the second RF source being connected to the second electrode.

Application No.: 10/032,279Docket No.: 2328-059

Claim 43: (original) The combination of claim 42 further including a filter arrangement connected to the first and second RF sources and the first and second electrodes for: (1) enabling current from the first RF source to flow to the first electrode, (2) preventing the substantial flow of current from the first RF source to the second electrode and the second RF source, (3) enabling current from the second RF source to flow to the first and second electrodes, and (4) preventing the substantial flow of current from the second RF source to the first RF source.

Claim 44: (currently amended) A vacuum plasma chamber for processing a workpiece, the chamber including: (i) a confined plasma excitation region arranged for enabling (a) gas to flow into the region, (b) gas to be excited to a plasma in the region, (c) enabling unionized gas to flow out of the region and (d) preventing the substantial flow of plasma and ionized gas from the region, and (ii) an outlet downstream of the region for the gas flowing out of the region; the region including (a) a first electrode for electrical coupling with gas in the chamber-region and for connection to a first relatively high frequency RF source, (b) a second electrode for carrying the workpiece and electrical coupling with gas in the chamber and for connection to a second relatively low frequency RF source, and a third electrode entirely in the region and connected to a reference potential inside a plasma-excitation region.

Claim 45: (currently amended) The chamber of claim 44 wherein the excitation region and a chamber wall are substantially isolated from each other by a ~~plasma-confinement arrangement~~ structure of the confined plasma excitation region.

**Application No.: 10/032,279****Docket No.: 2328-059**

Claim 46: (currently amended) The chamber of claim 45 wherein the confinement arrangement includes an arrangement ~~for passing the gas from inside the excitation region to outside the excitation region and~~ for affecting the gas pressure in the region.

Claim 47: (currently amended) The chamber of claim 44-45 wherein the ~~excitation region structure~~ includes a louver arrangement for substantially confining the plasma to the region.

Claim 48: (original) The chamber of claim 47 wherein louvers of the louver arrangement have high electrical conductivity and are at the reference potential.

Claim 49: (original) The chamber of claim 47 wherein louvers of the louver arrangement have low electrical conductivity and float electrically and are arranged to mechanically confine the plasma.

Claim 50: (original) The chamber of claim 49 wherein the spacing between adjacent pairs of the louvers is such as to provide the mechanical confinement.

Claim 51: (original) The chamber of claim 50 wherein the spacing is adjustable.

Claims 52-65 (Canceled)